Specifications for Problem A

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At the conference in Paris, September 1st, 2007, we agreed to concentrate on a few variants. For each model, I suggest to retain the parameter values the most challenging from the point of view of accuracy.

1 Common parameters

Parameter	Value
β	0.99
α	0.36
ζ	2
δ	0.025
σ	0.01
ρ	0.95
ϕ	0.5

The last parameter ϕ is the parameter of the investment adjustment cost. Choosing a low value increases the variance of the endogenous variables and leads in tests 2 (simulation) and 3 (Den Haan–Marcet) to consider state points further away from the steady state. On the other hand, choosing a high value for this parameter, $\phi = 10$ imposes more curvature on the model. Krueger, Kubler and Malin report that in their experiments, a low value of ϕ makes it more difficult for the approximation. Note that they use a global method and the proximity to the steady state shouldn't be a factor.

If we want to run more cases, this is probably the parameter that we should explore. But, for the time being, I suggest to limit ourselves to the case $\phi = 0.5$.

2 Model specific parameters

Model	N	γ	η	μ	χ
A1	2,4,6,8,10	1			
A2	2,4,6,8	0.25	0.1		
A3	2,4,6	0.25			
A4	2,4,6	0.25		-0.2	0.83
A5	2,4,6,8,10	(0.25,1)			
A6	2,4,6,8	(0.25,1)	(0.1,1)		
A7	2,4,6	(0.25,1)			
A8	2,4,6	(0.2,0.4)		(-0.3,0.3)	(0.75,0.9)

I left the original range of numbers of countries, N, as different methods have different upper limit. It is understood that each participant should try to solve for as many different numbers of countries as their method support.

3 Testing

I will prepare a common testing bench. Please send me a function that takes as input values of endogenous state variables in the previous period and shocks at the beginning of the current one and return values of all variables for the current period. It can be a Matlab, Fortran, C or C++ function. I will translate the Matlab functions in C++. The parameters of the approximated functions can be send either as a binary file containing floating numbers in double precision (64 bits) or as a binary Matlab file (.mat file).

As soon as I'm finished (end of October, I hope), I will make it available for you to try it at your end.